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PATENT SPECIFICATION

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One Complete Specification Left: Jan. 23, 1942.
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548,647

PROVISIONAL SPECIFICATION
No. 14439 A.D. 1941.

Improvements in and relating to Safety Razor Blades

I, GEORGE THEOPHILUS MONEY, a British Subject, of Front Street, South Creake, Fakenham, Norfolk, do hereby declare the nature of this invention to be as follows:—

A dual purpose blade that is capable of being used as a double edged blade having the usual registration holes disposed on the longitudinal axis, or as a single edged blade fitting the same double sided holder of conventional pattern (comprising a guard and coverplate clamped together with a central screw) and in addition because of length width and shape when divided fits and functions effectively as a single edged blade in the popular holders designed for, and which hitherto could only accommodate doubled edged blades with cut out corners and elongated slots. This is made possible by arranging for the removal of the centre portion of the double edged blade down two given lines producing thereby two single edged blades of suitable length, width and shape on the inner edge to fit either on or around or in between corner studs, shaped or plain centre bar, studs, or central clamping screw according to the type of holder used.

The double edged blade as manufactured is provided with two indentations preferably V-shaped running through the portions of blade in between the centre perforations, parallel to the cutting edges and partly through the thickness of blade making it easy to break the blade into two portions and to remove the remaining strip at the indentations referred to.

Dated the 8th day of November, 1941.
G. T. MONEY.

PROVISIONAL SPECIFICATION
No. 195 A.D. 1942.

Improvements in and relating to Safety Razor Blades

I, GEORGE THEOPHILUS MONEY, a British Subject, of Front Street, South Creake, Fakenham, Norfolk, do hereby declare the nature of this invention to be as follows:—

This invention relates to safety razor blades and it consists essentially of an improved method of manufacture for the production of either double-edged or single-edged blades, the double-edged blades having the usual registration holes disposed on the longitudinal axis and being capable of being used in the ordinary way in holders of conventional pattern or of being divided longitudinally through the registration holes to afford two single-edged blades each adapted to fit the same double-sided holder of conventional pattern; the single-edged blades produced by the improved method are also adapted to fit holders of at least one other pattern, designed for blades with cut-out corners, elongated medial slots and/or registration holes of non-circular shape. The improved method of manufacture likewise serves for the direct production of single-edged blades capable of being used in holders of conventional or other patterns, and it enables such blades to be produced with a standard blade-manufacturing plant designed for the production of double-edged blades.

According to the present invention, the strip from which the blades are to be produced is provided with series of locating holes, each series corresponding in position to the usual registration holes of double-edged blades for conventional holders, and either before or after the provision of the said holes, but in any event before the hardening of the strip, it is scored longitudinally in between the positions of the locating holes, parallel to the edges and partly through the thickness of the strip, making it easy to break the finished strip or blade-lengths if and when single-edged blades are required. Each of the blades, whether double or

[*Price*

single-edged, is made of such length as to fit between the corner projections of a holder designed for blades with cut-out corners, the ends or transverse lines of division being substantially straight and perpendicular to the longitudinal axis. The width of each single-edged blade is such that its cutting edge will occupy the correct position in a holder designed for blades with elongated medial slots, the inner edge or side opposite to the cutting edge then abutting against the centre bar or bars intended to engage in such medial slots. The shape of the said inner edge or opposite side is such that the notches or recesses left thereon by the longitudinal division through the locating or registration holes will fit on or around the central clamping screw and the studs or other locating means of the holder, whether of conventional or of other pattern.

In the manufacture of dual-purpose blades of standard width and having the usual three registration holes, capable of being used as double-edged blades in a holder of conventional pattern, or of being broken longitudinally down two given parallel lines in between the registration holes to form single-edged blades adapted to fit holders of other patterns as well as the conventional holder, the strip is scored longitudinally with two parallel indentations, preferably of vee-shape, running through the portions of the strip in between the registration holes, so as to allow the ready removal from the finished blades of the centre portions normally linking the single-edged blades together; the width of these centre portions, defined by the distance between the two indentations intersecting the registration holes, will usually correspond approximately to the width of the centre bars in holders designed for blades with elongated medial slots. If the double-edged blades are not required for use as such but solely for longitudinal division into single-edged blades, the strip may be made narrower than the standard width, and a single indentation may be scored along the centre of the strip for the purpose of assisting its longitudinal division into single-edged blades. In these cases, the shape of the locating holes will likewise be varied so that either the removal of the centre portions or the central fracture without removal of any centre portion will leave upon the inner edges of the single-edged blades, notches or recesses of the shape required to fit on or around the clamping screw and locating means of the holder.

In a modification of the invention, the strip can be made still narrower and provided with series of locating holes offset towards one side; the longitudinal division through these holes, which are utilized in the processing of the strip, will remove the narrow side portion and leave on the other side single-edged blades of correct length and width, having notches or recesses so shaped as to fit on or around the clamping screw and locating means of the holder, whether of conventional or other pattern.

The invention thus renders it possible to provide with a standard blade-manufacing plant, designed for the production of double-edged blades having the usual three registration holes of substantially circular shape to suit the conventional holders, single-edges blades which are capable of being used satisfactorily on various double-sided holders, including certain patterns calling for blades having cut-out corners, elongated medial slots or other characteristics, although the particular plant is incapable of producing single-edged blades as such; the only additional steps necessary are the longitudinal indentation or equivalent treatment for facilitating the division of the blades if the actual division is to be readily performed by the user of the blades. The invention also provides an improved single-edged blade, formed from a completely finished double-edged blade but adaptable to holders to which such double-edged blade cannot be fitted.

Dated the 6th day of January, 1942.
For the Applicant,
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COMPLETE SPECIFICATION

Improvements in and relating to Safety Razor Blades

I, George Theophilus Money, a British Subject, of Front Street, South Creake, Fakenham, Norfolk, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to safety razor blades.

It has already been proposed to divide double-edged safety razor blades into two equal portions forming single-edged blades by a line of severance extending longitudinally through the registration holes or through the elongated medial slot.

the end portions of the slotted blades being weakened for this purpose by scoring or indenting the metal; such division of the blades, with the object of avoiding deterioration of the second cutting edge while the first is in use, leaves each single-edged blade adaptable only to the same pattern of holder as the original double-edged blade or to a corresponding single-sided holder, the shape of the registration holes or medial slot being unchanged by the division and each single-edged blade being half the width of the original double-edged blade.

The present invention consists of an improvement in the manufacture of safety razor blades from steel strip provided with series of locating holes disposed on a longitudinal lines, the holes of each series being spaced apart like the usual registration holes of double-edged blades for conventional three-peg holders, by scoring the strip longitudinally in between the locating holes, parallel to the edges and partly through the thickness of the strip, the distance between one or each edge of the strip and the longitudinal scoring being less than half the standard width of a double-edged blade, so that the finished strip or blade-lengths can be readily broken along said longitudinal scoring to form single-edged blades of less than half said standard width and having their broken sides notched or recessed to a depth less than half the width of said usual registration holes.

Each of the blades, whether double or single-edged, is made of such overall length as to fit between the corner projections of a holder designed for blades with cut-out corners, the ends or transverse lines of division being substantially straight and perpendicular to the longidinal axis. The width of each single-edged blade is such that its cutting edge will occupy the correct position in a holder designed for blades with elongated medial slots, the inner edge or side opposite to the cutting edge then abutting against the centre bar or bars intended to engage in such medial slots. The shape of the said inner edge or opposite side is such that the notches or recesses left thereon by the longitudinal division through the locating or registration holes will fit on or around the central clamping screw and the studs or other locating means of the holder, whether of conventional or of other pattern.

The invention is hereinafter described with reference to the accompanying drawings in which:—

Fig. 1 represents a length of steel strip for the manufacture of the improved dual-purpose blades, showing the positions of the locating or registration holes and of the longitudinal indentations.

Fig. 2 represents the improved double-edged blade applied to the cap of a conventional double-sided holder having a central clamping screw and cylindrical locating studs.

Fig. 3 shows the same blade divided along one boundary line of the central portion so as to provide one of the two single-edged blades.

Fig. 4 illustrates the application of one of the single-edged blades to the cap of a double-sided holder designed for double-edged blades with medial slots and recessed corners.

Fig. 5 illustrates the application of one of the single-edged blades to the cap of a double-sided holder designed for double-edged blades with medial slots, recessed corners and non-circular registration holes.

Fig. 6 shows diagrammatically a suitable arrangement for producing the longitudinal indentations upon the steel strip.

Fig. 7 shows another length of steel strip for the manufacture of single-edged blades according to the invention;

Fig. 8 represents a pair of the single-edged blades made by dividing the finished strip.

The steel strip *a* employed for the manufacture of the improved dual-purpose blades by the preferred method has the customary width corresponding to that of a double-edged blade; as indicated in Fig. 1, it is scored with two indentations *b*, preferably vee-shaped, extending partly through the thickness of the strip. In order to produce the indentations, the steel strip *a*, while still in a soft state, can be passed (as shown in Fig. 6) between a pair of rollers *r*, r^1 driven by any convenient means, the middle of the upper roller *r* having two circumferential ribs r^2 of sharp vee-section spaced at a suitable distance apart, and the other roller r^1 having guide-flanges or shrouds r^3 to keep the strip in line with the rollers. The depth of the indentations is such as to make it easy for the hardened blades subsequently produced from the strip to be broken at the lines of the indentations. The strip is also punched out to form the locating or registration holes *c d c* in regular sequence, such holes being utilized in the processing of the strip and also in fitting the blades to a holder; as shown, each blade-length *e* comprises two oval or flattened circular holes *c* and one circular hole *d* to receive respectively (as shown in Fig. 2) the cylindrical locating studs or prongs *f* and the central clamping screw *g* provided upon the cap *h* of a conventional double-sided holder. The overall length e of the individual blades i is preferably equal to the length of the cutting edges j j^1 upon the finished blades when hardened and ground, the ends or transverse edges k k^1 being substantially straight and perpendicular to the length instead of being curved or otherwise extended outwards beyond the ends of the cutting edges.

It will be noted that the narrow centre portion l between the indentations b intersects the registration holes c d and is thereby divided into a number of sections linking together the two outer parts bearing the cutting edges j j^1; this subdivision of the centre portion l into several discontinuous sections facilitates the breaking of the blade i along the line of the indentations and substantially eliminates all risk of irregular fracture. The double-edged blade i can therefore be readily broken to remove the centre portion l, leaving two single-edged blades i^1 i^2; as represented in Fig. 3, the upper blade i^1 has been broken away, leaving the centre portion l still attached to the other blade i^2, but the portion l can evidently be removed by breaking off both blades, and the breaking can be done by hand or by simple mechanical means such as a narrow-edged roller co-operating with a grooved roller or other support for the outer parts of the blade.

Each of the single-edged blades i^1 i^2 formed by the removal of the centre portion l from the double-edged blade i can be utilized in a suitable holder designed for double-edged blades; the single-edged blade will obviously be suitable for the same conventional holder described with reference to Fig. 2, for example in order to avoid deterioration of a second cutting edge, and in particular these single-edged blades with notches d^1 c^1 are suitable for the popular holders intended to accommodate only certain double-edged blades having elongated medial slots, recessed corners and/or non-circular registration holes.

For example, Fig. 4 shows the cap m of a double-sided holder designed for blades with medial slots and cut-out or recessed corners, the cap having a longitudinal bar or bars n to occupy such medial slots and four downward projections o for which the recessed corners of the cut-out blade provide clearance; the single-edged blade i^1, formed as above described and secured in place by the screwing together of the parts of the holder, will fit and function effectively in a holder of this type. The overall length e of the blade is such as to provide clearance between the projections o adjacent to the cutting edge j, the width is such as to locate the cutting edge j correctly when the opposite side abuts against and fits on the bar or bars n, and the arcuate notch d^1 remaining from the registration hole d of the original double-edged blade, fits partly around the clamping screw g.

Similarly, as illustrated in Fig. 5, the single-edged blade i^2 can be employed in a double-sided holder designed for blades with medial slots, recessed corners and non-cylindrical registration holes; the cap p in this case is shown provided with a narrow longitudinal bar or bars n^1, downward projections o^1 and locating means q of non-cylindrical shape. The blade i^2 will fit and function effectively in a holder of this type, because the length provides clearance between the corner projections o^1 adjacent to the cutting edge j^1, and the notches d^1 c^1 remaining from the registration holes of the original blade fit on or partly around the clamping screw g and the non-cylindrical locating means q, while the width is such as to locate the cutting edge j^1 correctly when the opposite side has its notches fitted on or around the parts g q.

It will be understood that the centre portion l of the double-edged blade i which portion is subdivided by the intersecting registration holes c d c into a number of linking sections, could be left attached to either (or partly to each) of the single-edged blades i i^1 for use in a holder of conventional type as described with reference to Fig. 2; on the other hand, the centre portion must be removed before both single-edged blades i^1 i^2 can be utilized in double-edged holders of the types described with reference to Figs. 4 and 5, the removal being necessary (because of the longitudinal bar or bars n n^1 and/or locating means q) in order to give the correct distance of the cutting edges j j^1 from the longitudinal axes of the holders. The presence of this removable centre portion in a completely finished double-edged blade of the well known general type permits the ready formation therefrom of an improved type of single-edged blade possessing entirely different characteristics and unusual adaptability, in that it can be utilized effectively in holders of various patterns to which the undivided double-edged blade with three registration holes is not applicable.

The width of the centre portions l, defined by the distance between the two indentations b intersecting the registration holes c, d, will usually correspond approximately to the width of the centre bars n in holders designed for blades with elongated medial slots, as described with reference to Fig. 4. If the double-edged blades are not required for use as such but solely for longitudinal division into single-edged blades, the strip *a*, as illustrated in Fig. 7, may be made narrower than the standard width of strip shown in Fig. 1, and a single indentation b^1 may be scored along the centre of the strip for the purpose of assisting its longitudinal division into two single-edged blades i^1 i^2, as shown in Fig. 8, without the removal of any centre portion such as *l*. In the latter case, the shape of the locating holes *c d* will likewise be varied so that the central fracture at b^1 without removal of any centre portion will leave upon the inner edges of the single-edged blades, remote from the cutting edges *j* j^1, notches or recesses d^1 c^1 of the shape required to fit on or around the clamping screw *g* and locating means *f*, *n* or *q* of the holder employed.

In a modification of the invention, the strip *a* can be made still narrower (as indicated by the chain-line *s* in Fig. 7) and provided with series of locating holes *c d* offset towards one side; the longitudinal division at the single indentation b^1 passing through these holes, which are utilized in the processing of the strip, will remove the narrow side portion between the lines b^1 and *s*, so as to leave on the other side single-edged blades similar to that shown at i^1 in Fig. 8, that is, of correct length and width, and having notches or recesses d^1 c^1 so shaped as to fit on or around the clamping screw and locating means of the holder, whether of conventional or other pattern.

The invention thus renders it possible to provide with a standard blade-manufacing plant, designed for the production of double-edged blades having the usual three registration holes of substantially circular shape to suit the conventional holders, single-edged blades which are capable of being used satisfactorily on various double-sided holders, including certain patterns calling for blades having cut-out corners, elongated medial slots or other characteristics, although the particular plant is incapable of producing single-edged blades as such; the only additional steps necessary are the longitudinal indentation or equivalent treatment for facilitating the division of the blades if the actual division is to be readily performed by the user of the blades. The invention also provides an improved single-edged blade, formed from a completely finished double-edged blade but adaptable to holders to which such double-edged blade cannot be fitted.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. In the manufacture of safety razor blades from steel strip provided with series of locating holes disposed on a longitudinal line, the holes of each series being spaced apart like the usual registration holes of double-edged blades for conventional three-peg holders, the improvement which consists in scoring the strip longitudinally in between the locating holes, parallel to the edges and partly through the thickness of the strip, the distance between one or each edge of the strip and the longitudinal scoring being less than half the standard width of a double-edged blade, so that the finished strip or blade-lengths can be readily broken along said longitudinal scoring to form single-edged blades of less than half said standard width and having their broken sides notched or recessed to a depth less than half the width of said usual registration holes.

2. A single-edged safety razor blade produced by longitudinal division after manufacture according to claim 1, of a steel strip or double-edged blade, the division intersecting the locating or registration holes so as to leave the single-edged blade with an opposite side or inner edge having three separate spaced notches or recesses adapted to fit the locating means of various known patterns of holders, including at least one pattern of double-sided holder to which the conventional three-hole double-edged blade cannot be fitted, and the width of said single-edged blade being less than half the standard width of a double-edged blade.

3. A double-edged safety razor blade, of standard width and three-hole fitting, which is adapted to be broken to form two single-edged blades according to claim 2, by removal of the centre portion normally linking the single-edged blades together, said centre portion being defined by two parallel scores or indentations intersecting the registration holes.

4. A safety razor blade according to claim 2 or 3, having an overall length such as to fit between the corner projections of a holder designed for blades with cut-out corners, the ends or transverse lines of division being substantially straight and perpendicular to the longitudinal axis.

Dated the 23rd day of January, 1942.

For the Applicant,
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Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1942.

[This Drawing is a reproduction of the Original on a reduced scale.]

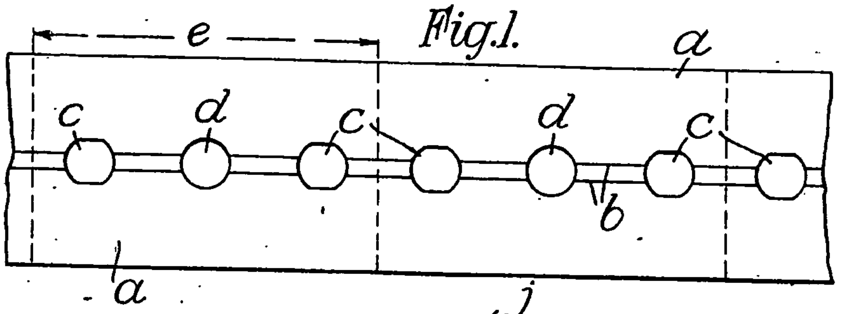


Fig.1.

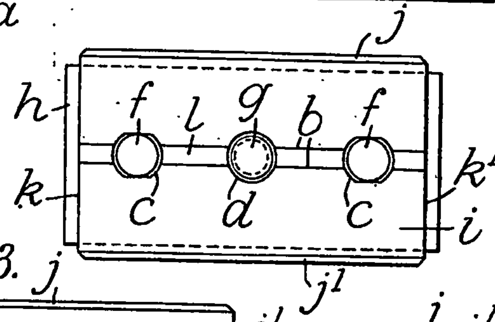


Fig.2.

Fig.3.

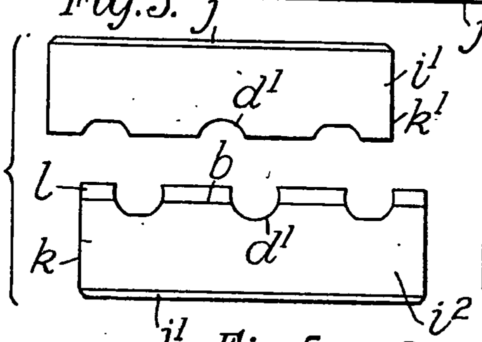


Fig.4.

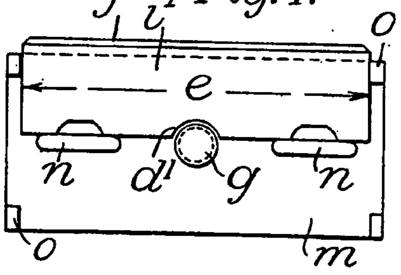
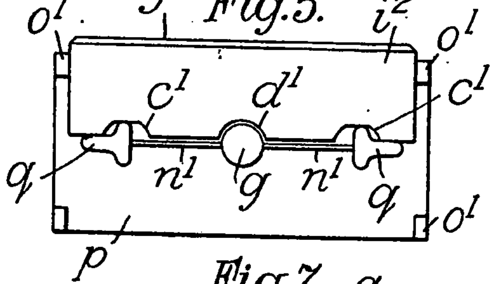


Fig.5.



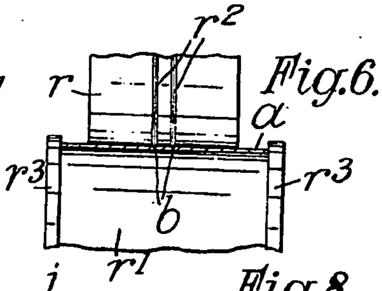


Fig.6.

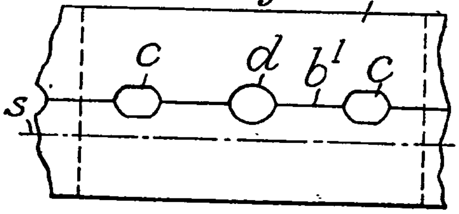


Fig.7.

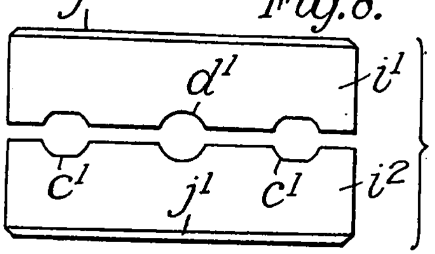


Fig.8.